

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 37

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NORIHIRO OCHI, KOHJI TSURUI,
KOUICHI FUKUSHIMA, KAZUYA KOYAMA,
HISASHI YOSHIMURA, KOUZOU YAMAGUCHI,
SHIGENORI MORIMOTO, and TAKAYUKI HIGASHIO

Appeal No. 1998-2471
Application No. 08/222,913¹

HEARD: November 2, 1999

Before THOMAS, FLEMING, and BARRY, Administrative Patent Judges.
BARRY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the final rejection of claims 1-7, 11-20, and 22-25. The appellants filed an amendment after final rejection on June 23, 1997, which was entered. We affirm-in-part.

¹ The application was filed on April 5, 1994.

BACKGROUND

The invention at issue in this appeal relates to ink-jet cartridges for use in computer printers. Specifically, the invention detects a low supply of ink in such a cartridge. Several embodiments of the invention are disclosed and claimed.

Claim 11, which is representative for our purposes, follows:

11. An ink cartridge for an ink jet printer, comprising:
a container for supplying ink outwardly of said container,
wherein said container contains ink having an electrical resistance and a specific gravity,
an ink exhaustion indicating liquid, not miscible with said ink located in said container next to said ink, and having a specific gravity smaller than the specific gravity of said ink and an electrical resistance greater than the electrical resistance of said ink, and
electrodes for detecting the exhaustion of ink in the container on a basis of a difference in electrical resistance of said ink and said ink exhaustion indicating liquid.

Besides the appellants' admitted prior art (APA), the references relied on in rejecting the claims follow:

Kern	4,196,625	Apr. 8, 1980
Heinzl et al. (Heinzl)	4,202,267	May 13, 1980
Italiano	4,380,772	Apr. 19, 1983
 Murai et al. (Murai)	 4,626,874	 Dec. 2, 1986
Isganitis et al. (Isganitis)	5,563,644	Oct. 8, 1996 (filed Feb. 3, 1992)
 Inoue ² (Japanese Patent)	 4-197646	 Jul. 17, 1992.

Claims 1-3 stand rejected under 35 U.S.C. § 103 as obvious over Italiano. Claim 4 stands rejected under 35 U.S.C. § 103 as obvious over Italiano in view of Isganitis. Claims 5-7, 11, and 22-24 stand rejected under 35 U.S.C. § 103 as obvious over Italiano in view of APA. Claims 12, 18, and 19 stand rejected under 35 U.S.C. § 103 as obvious over Inoue in view of Heinzl. Claims 13 and 14 stand rejected under 35 U.S.C. § 103 as obvious over Inoue in view of Heinzl further

² We rely on a translation of Inoue, a copy of which is provided to the appellants.

in view of Kern. Claims 15-17, 20, and 25 stand rejected under 35 U.S.C. § 103 as obvious over Inoue in view of Heinzl further in view of Kern further in view of Murai. Rather than repeat the arguments of the appellants or examiner in toto, we refer the reader to the briefs and answer for the respective details thereof.

OPINION

In reaching our decision in this appeal, we considered the subject matter on appeal and the rejections and evidence advanced by the examiner. Furthermore, we duly considered the arguments of the appellants and examiner. After considering the totality of the record, we are persuaded that the examiner erred in rejecting claims 1-7, 11, and 22-24. We are not persuaded, however, that the examiner erred in rejecting claims 12-20 and 25. Accordingly, we affirm-in-part. Our opinion addresses the grouping and obviousness of the claims.

Grouping of the Claims

37 C.F.R. § 1.192(c)(7) (July 1, 1997), as amended at 60 Fed. Reg. 14518 (Mar. 17, 1995), was controlling when the appeal brief was filed. Section 1.192(c)(7) stated as follows.

For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and, in the argument under paragraph (c)(8) of this section, appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable.

In addition, claims that are not argued separately stand or fall together. In re Kaslow, 707 F.2d 1366, 1376, 217 USPQ 1089, 1096 (Fed. Cir. 1983). When the patentability of dependent claims in particular is not argued separately, the claims stand or fall with the claims from which they depend. In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983).

The appellants state that claims 1-7, 11, 12, 16, 17, 18, 19, and 25 should be considered separately for the appeal.

(Appeal Br. at 5.) They also state that the remainder of the claims should be considered in the following groups for the appeal: claims 12 and 20, claims 13-15, and claims 22-24.

(Id.) Conversely, the appellants omit a statement that claims 12 and 20 do not stand or fall together, a statement that claims 13-15 do not stand or fall together, and a statement that claims 22-24 do not stand or fall together. Besides omitting reasons why claims 14, 15, 20, 23, and 24 are separately patentable, they also omit reasons why claim 16 is separately patentable from claim 17. Therefore, we consider claims 1-7, 11, 12, 18, 19, and 25 to stand or fall separately. We consider the remainder of the claims to stand or fall together in the following groups:

- claims 12 and 20
- claim 13-15
- claims 16 and 17
- claims 22-24.

We also consider claims 12, 13, 17, and 22, as representative of the respective groups. Next, we address the obviousness of the claims.

Obviousness of the Claims

We begin by finding that the references represent the level of ordinary skill in the art. See In re GPAC Inc., 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995) (finding that the Board of Patent Appeals and Interference did not err in concluding that the level of ordinary skill in the art was best determined by the references of record); In re Oelrich, 579 F.2d 86, 91, 198 USPQ 210, 214 (CCPA 1978) ("[T]he PTO usually must evaluate ... the level of ordinary skill solely on the cold words of the literature."). Of course, every patent application and reference relies on the knowledge of persons skilled in the art to complement its disclosure. In re Bode, 550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977). Such persons must be presumed to know something about the art apart from what the references teach. In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962). We address the obviousness of claims 1-7, 11, and 22-24, claims 12 and 20, claims 13-15, claims 16 and 17, claim 18, claim 19, and claim 25.

Claims 1-7, 11, and 22-24

Regarding claims 1-7, the appellants argue, "Italiano ... does not disclose or suggest the specific resistance limitation as claimed." (Appeal Br. at 8.) Regarding claim 11, the appellants similarly argue that the references do not suggest that "the ink and the ink exhausting indicating liquid have a specific electrical resistance." (Id. at 13.) Regarding claims 22-24, the appellants similarly argue, "these claims require ... that the liquids ... have different resistance values As stated above, the combination of Italiano and the []APA does not disclose this structure." (Id.) The examiner replies, "the resistance limitation is ... well met by Italiano teaching an oil-based liquid floating on top of the ink, wherein the liquid and the ink each inherently possesses electrical resistance of such claimed relationship in order for the liquid to float on top of the ink." (Examiner's Answer at 12.) We agree with the appellants.

Independent claim 1 specifies in pertinent part the following limitation: "ink ... having an electrical resistance of a first value ... and an ink exhaustion indicating liquid having an electrical resistance of a second value which is

greater than said first value" Independent claim 11 similarly specifies in pertinent part the following limitation: "an ink exhaustion indicating liquid ... having ... an electrical resistance greater than the electrical resistance of said ink" Independent claim 22 similarly specifies in pertinent part the following limitation: "one of said liquids being ink having an electrical resistance of a first value; the other one of said liquids having an electrical resistance of a second value which is greater than said first value" Giving the claims their broadest reasonable interpretation, the limitations recite an indicating liquid with a resistance that is greater than that of an ink.

The examiner fails to show a teaching or suggestion of these limitations in the prior art. "A rejection based on section 103 clearly must rest on a factual basis" In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967). "The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not ... resort to speculation, unfounded assumptions[,] or hindsight

reconstruction to supply deficiencies in its factual basis." Id., 379 F.2d at 1017, 154 USPQ at 178. When relying on inherency, moreover, an examiner must provide a basis in fact or technical reasoning to reasonably support a determination that an allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Int. 1990).

Here, the examiner admits, "Italiano does not disclose an electrical resistance of the liquid being greater than that of the ink, the ink is conductive" (Examiner's Answer at 4.) Attempting to overcome the deficiency, she alleges, "the liquid and the ink each inherently possesses electrical resistance of such claimed relationship in order for the liquid to float on top of the ink." (Id. at 12.) The examiner fails to provide a factual basis or technical reasoning, however, to reasonably support a determination that the resistance of the indicating liquid being greater than that of the ink necessarily flows from the teachings of Italiano. As noted by the appellants, "Italiano does not disclose, either specifically or inherently, the value of the two liquids as to their resistance values." (Appeal Br. at

10.) Nor does the prior art recognize a relation between the density of liquids and their electrical resistance to support the examiner's allegation. APA does not cure these defects. In view of these omissions the examiner's allegation amounts to speculation or an unfounded assumption.

For the foregoing reasons, the examiner has not established a prima facie case of obviousness. Therefore, we reverse the rejection of claims 1-7, 11, and 22-24. Next, we address the obviousness of claims 12 and 20.

Claims 12 and 20

The appellants make two arguments regarding claims 12 and 20. We address these seriatim. First, the appellants argue, "In the combined references, a single ink permeable member is not disclosed. For example, in Inoue, there are two permeable members." (Appeal Br. at 15.) The examiner replies, "Inoue discloses the invention as claimed. The fact that it discloses additional structure not claimed is irrelevant." (Examiner's Answer at 16.) We agree with the examiner.

The appellants err in interpreting the scope of the claims. "[A] transitional term such as 'comprising' or ... 'which comprises,' does not exclude additional unrecited elements, or steps (in the case of a method claim)"

Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271, 229 USPQ 805, 812 (Fed. Cir. 1986). Here, independent claim 12 specifies in pertinent part "[a]n ink jet printer comprising: means for storing ink, said means including a single ink permeable element"

As admitted by the appellants, Inoue teaches at least one ink permeable element 8a. Translation, p. 4. The reference's ink permeable element would have suggested the ink permeable element as claimed. Because claim 12 uses the transitional phrase "comprising," the claim does not exclude the additional ink permeable element 8b of the reference.

Second, the appellants argue, "there is no draw out means attached in a detachable manner, as claimed." (Appeal Br. at 15.) The examiner replies, "Inoue discloses an ink draw out means (3a) for attaching to the ink storing means in a

detachable manner and for drawing out ink from the ink chamber
...." (Examiner's Answer at 16.) We agree with the examiner.

Independent claim 12 specifies in pertinent part "ink
draw out means including means for attaching to said ink
storing means in a detachable manner, for drawing out ink from
said ink chamber" Inoue teaches a hollow needle 3a,
which penetrates a septum 5 of an ink container 4. When the
septum is penetrated, ink is drawn out from the container
through the needle to a printing head 3. Translation of
Inoue, p. 4. The reference's teaching would have suggested
the ink draw out means as claimed.

For the foregoing reasons, the examiner has established a
prima facie case of obviousness. Therefore, we affirm the
rejection of claims 12 and 20. Next, we address the
obviousness of claims 13-15.

Claims 13-15

Regarding claims 13-15, the appellants argue, "While Kern
does show some of the electrodes separated by element 4 (See

Fig. 1), the electrodes, for example, in the area of element 5 are not separated." (Appeal Br. at 17.) The examiner replies, "Kern discloses the invention as claimed, i.e., [] partition wall or dividing means for separating the plurality of ink level detection electrodes (6/2 and 6/3)." (Examiner's Answer at 17-18.) We agree with the examiner.

The appellants err in interpreting the scope of the claims. Here, claim 13 specifies in pertinent part "said ink chamber comprises dividing means therein for separating said plurality of electrodes from each other." The appellants admit, "Kern does show some of the electrodes separated by element 4 (See Fig. 1)" (Appeal Br. at 17.) More specifically, Kern teaches that electrodes 6/2 and 6/3 are separated by an interposed wall 4. Fig. 2. The reference's wall would have suggested the dividing means as claimed. Because claim 13 uses the transitional phrase "comprising," the claim does not exclude the additional ink electrode 6/1 of the reference.

For the foregoing reasons, the examiner has established a prima facie case of obviousness. Therefore, we affirm the rejection of claims 13-15. Next, we address the obviousness of claims 16 and 17.

Claims 16 and 17

Regarding claims 16 and 17, the appellants argue that the claims "require that the cylindrical member has a curved cross section and that the cylindrical member has a tapered cross section, respectively. This structure is not shown or suggested by Murai or the other references applied." (Appeal Br. at 18.) The examiner replies, "such a modification would have involved a mere change in the shape of a component." (Examiner's Answer at 20.) The appellants respond, "from the result of this structure as set forth in the specification, a 'boiler plate' rejection that it is a design change is not viable." (Reply Br. at 7.)

Claim 17 specifies in pertinent part a "cylindrical member [that] has a tip end with an outer wall having a tapered cross sectional configuration."

The appellants err in considering the references in less than their entirety. A reference must be considered as a whole for what it reveals "to workers in the art." Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566, 1 USPQ2d 1593, 1595 (Fed. Cir. 1987). Here, Murai teaches an electrode 42. Col. 3, l. 12. Figure 2 shows that the tip end 42a of the electrode has a tapered cross sectional configuration. The reference's tapered configuration would have suggested the tapered cross sectional configuration as claimed. Claim 16 is not argued separately and falls with claim 17.

For the foregoing reasons, the examiner has established a prima facie case of obviousness. Therefore, we affirm the rejection of claims 16 and 17. Next, we address the obviousness of claim 18.

Claim 18

Regarding claim 18, the appellants argue, "The structure of claim 18 is not suggested by the references in the context claimed." (Appeal Br. at 15.) The examiner replies, "Heinzl discloses an ink-jet printer comprising an ink chamber (1) having an upward convex cross sectional configuration." (Examiner's Answer at 17.) We agree with the examiner.

Claim 18 specifies in pertinent part an "ink chamber [that] has an upward convex cross sectional configuration." Heinzl teaches an ink vessel 1. Col. 2, ll. 45-46. Figure 1 shows that the ink vessel has an upward convex cross sectional configuration. The reference's convex configuration would have suggested the upward convex cross sectional configuration as claimed.

For the foregoing reasons, the examiner has established a prima facie case of obviousness. Therefore, we affirm the rejection of claim 18. Next, we address the obviousness of claim 19.

Claim 19

Regarding claim 19, the appellants argue, "there is no suggestion of the particular convex area with the electrodes located as claimed." (Appeal Br. at 16.) The examiner replies, "Since Appellants did not define in the claim (cl. 19) the space areas in the ink chamber, the Examiner defines a small section above electrode 4 as an upper space area and a larger section above electrode 3 as a lower space area to meet the limitation as claimed." (Examiner's Answer at 17.) We agree with the examiner.

The appellants err by attempting to read limitations from the specification into the claims. "In the patentability context, claims are to be given their broadest reasonable interpretations. Moreover, limitations are not to be read into the claims from the specification." In re Van Geuns, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993) (internal citations omitted). Here, claim 19 specifies in pertinent part a "first electrode [that] is disposed at an upper space area in said ink chamber and [a] said second electrode [that] is disposed at a lower space area which is larger than said upper space area." Giving claim 19 its

broadest reasonable interpretation, the claim recites two electrodes, one of which is disposed in a larger area of the ink chamber than the other.

The appellants have not shown error in the examiner's aforementioned interpretation of a small section above Heinzl's electrode 4 as an upper space area and a larger section above the reference's electrode 3 as a lower space area to meet the limitation as claimed. For the foregoing reasons, the examiner has established a prima facie case of obviousness. Therefore, we affirm the rejection of claim 19. Next and last, we address the obviousness of claim 25.

Claim 25

Regarding claim 25, the appellants argue, "Claim 25 is not suggested by the references applied." (Appeal Br. at 19.) The examiner replies, "it would have been obvious ... that the cylindrical member already contains a waterproof coating thereon or to incorporate a waterproof coating thereon for the

purpose of protecting the electrode." (Examiner's Answer at 21.) The appellants respond that the claim "is directed to a waterproofing coating for a specific purpose in the combination which is not at all suggested by the references nor would this purpose (result) be obvious or expected by one skilled in the art." (Reply Br. at 7.) We agree with the examiner.

Claim 25 specifies in pertinent part that "the cylindrical member has a waterproof coating." Murai teaches that the tip of the electrode 42 "may be provided with water-repellent treatment, in order to promptly dissipate ink." Col. 3, ll. 20-22. The teaching would have suggested applying a water-repellent treatment to the reference's insulating member 44 in order to promptly dissipate ink therefrom.

For the foregoing reasons, the examiner has established a prima facie case of obviousness. Therefore, we affirm the rejection of claim 25.

We end by noting that the aforementioned affirmances are based only on the arguments made in the briefs. Arguments not raised therein are not before us, are not at issue, and are thus considered waived.

CONCLUSION

To summarize, the examiner's rejection of claims 1-7, 11, and 22-24 under 35 U.S.C. § 103 is reversed. Her rejection of claims 12-20 and 25 is affirmed. Accordingly, we affirm-in-part.

No period for taking subsequent action concerning this
appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
MICHAEL R. FLEMING)	APPEALS
Administrative Patent Judge)	AND
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LANCE LEONARD BARRY)	
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